

1. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Perpendicular to  $5x + 4y = 5$  and passing through the point  $(-4, 8)$ .

- A.  $m \in [1.13, 1.31]$   $b \in [10.92, 11.39]$
  - B.  $m \in [0.28, 0.91]$   $b \in [-11.74, -10.48]$
  - C.  $m \in [0.28, 0.91]$   $b \in [10.92, 11.39]$
  - D.  $m \in [-0.85, -0.52]$   $b \in [4.04, 4.84]$
  - E.  $m \in [0.28, 0.91]$   $b \in [11.61, 12.83]$
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2. Solve the equation below. Then, choose the interval that contains the solution.

$$-7(-10x - 16) = -19(-14x - 15)$$

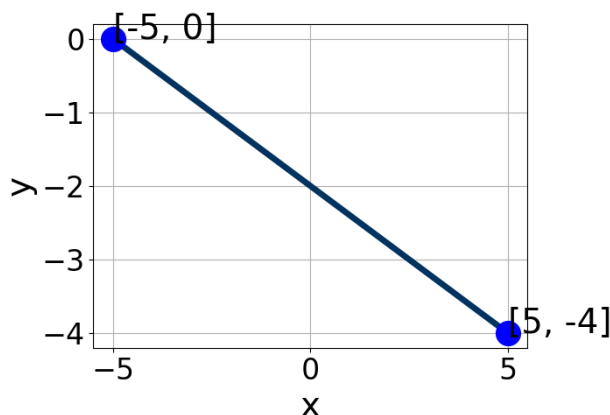
- A.  $x \in [-3.12, -1.99]$
  - B.  $x \in [1.49, 2.62]$
  - C.  $x \in [-1.19, -0.91]$
  - D.  $x \in [-0.89, -0.78]$
  - E. There are no real solutions.
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3. Solve the equation below. Then, choose the interval that contains the solution.

$$-19(-8x + 3) = -11(-2x - 16)$$

- A.  $x \in [-0.95, -0.73]$
  - B.  $x \in [1.55, 1.82]$
  - C.  $x \in [0.83, 1]$
  - D.  $x \in [-0.73, -0.55]$
  - E. There are no real solutions.
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4. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [-3.1, -0.3]$ ,  $B \in [-7.1, -4.2]$ , and  $C \in [8.3, 10.6]$   
B.  $A \in [-0.4, 1.1]$ ,  $B \in [-2.3, -0.3]$ , and  $C \in [0, 4.5]$   
C.  $A \in [1.6, 4.5]$ ,  $B \in [3.2, 6.5]$ , and  $C \in [-10.7, -9.3]$   
D.  $A \in [1.6, 4.5]$ ,  $B \in [-7.1, -4.2]$ , and  $C \in [8.3, 10.6]$   
E.  $A \in [-0.4, 1.1]$ ,  $B \in [-0.2, 1.1]$ , and  $C \in [-2.5, 1.1]$

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5. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{8x + 5}{8} - \frac{-9x + 6}{5} = \frac{5x + 3}{2}$$

- A.  $x \in [11.8, 13.9]$   
B.  $x \in [-2.2, 0]$   
C.  $x \in [6.2, 7.8]$   
D.  $x \in [-0.4, 2]$   
E. There are no real solutions.

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6. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Parallel to  $3x - 5y = 8$  and passing through the point  $(4, 4)$ .

- A.  $m \in [0, 1.5]$   $b \in [-0.5, 1.34]$
  - B.  $m \in [1.5, 2.2]$   $b \in [1.4, 2.05]$
  - C.  $m \in [0, 1.5]$   $b \in [1.4, 2.05]$
  - D.  $m \in [-0.9, -0.2]$   $b \in [6.21, 7.56]$
  - E.  $m \in [0, 1.5]$   $b \in [-2.12, -0.92]$
- 

7. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{3x - 9}{2} - \frac{6x + 7}{6} = \frac{-8x + 3}{7}$$

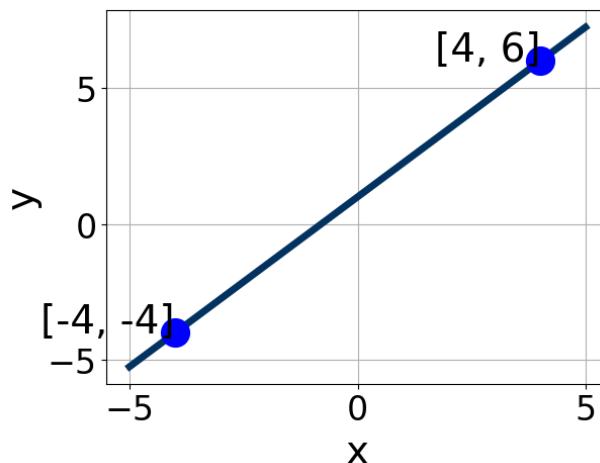
- A.  $x \in [1.4, 3.3]$
  - B.  $x \in [0.6, 1.3]$
  - C.  $x \in [2.9, 4.4]$
  - D.  $x \in [11.3, 12.6]$
  - E. There are no real solutions.
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8. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$$(8, 3) \text{ and } (-2, -4)$$

- A.  $m \in [-0.48, 0.74]$   $b \in [-2.85, -2.4]$
  - B.  $m \in [-0.48, 0.74]$   $b \in [-5.02, -4.7]$
  - C.  $m \in [-0.48, 0.74]$   $b \in [2.56, 3.03]$
  - D.  $m \in [-0.48, 0.74]$   $b \in [-2, -1.98]$
  - E.  $m \in [-0.94, 0.14]$   $b \in [-5.81, -5.06]$
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9. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [-3.25, 3.75]$ ,  $B \in [-0.28, 2.73]$ , and  $C \in [0.7, 2.5]$   
 B.  $A \in [2, 9]$ ,  $B \in [-4.28, -2.48]$ , and  $C \in [-6.4, -1.6]$   
 C.  $A \in [-7, -3]$ ,  $B \in [2.35, 4.17]$ , and  $C \in [3.7, 5.1]$   
 D.  $A \in [-3.25, 3.75]$ ,  $B \in [-2.3, -0.22]$ , and  $C \in [-3.9, 0.4]$   
 E.  $A \in [2, 9]$ ,  $B \in [2.35, 4.17]$ , and  $C \in [3.7, 5.1]$

10. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$(-5, 6)$  and  $(9, 3)$

- A.  $m \in [-1.7, 0.14]$   $b \in [-5.04, -4.83]$   
 B.  $m \in [0.16, 3.02]$   $b \in [-0.09, 3.74]$   
 C.  $m \in [-1.7, 0.14]$   $b \in [2.8, 6.12]$   
 D.  $m \in [-1.7, 0.14]$   $b \in [10.9, 11.73]$   
 E.  $m \in [-1.7, 0.14]$   $b \in [-6.78, -5.15]$

11. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Perpendicular to  $7x + 8y = 6$  and passing through the point  $(10, 8)$ .

- A.  $m \in [0.99, 1.5]$   $b \in [-2, 1]$
  - B.  $m \in [0.06, 0.99]$   $b \in [-4.43, -2.43]$
  - C.  $m \in [0.99, 1.5]$   $b \in [-4.43, -2.43]$
  - D.  $m \in [-1.64, -0.82]$   $b \in [13.43, 23.43]$
  - E.  $m \in [0.99, 1.5]$   $b \in [1.43, 4.43]$
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12. Solve the equation below. Then, choose the interval that contains the solution.

$$-6(15x + 17) = -3(-19x + 18)$$

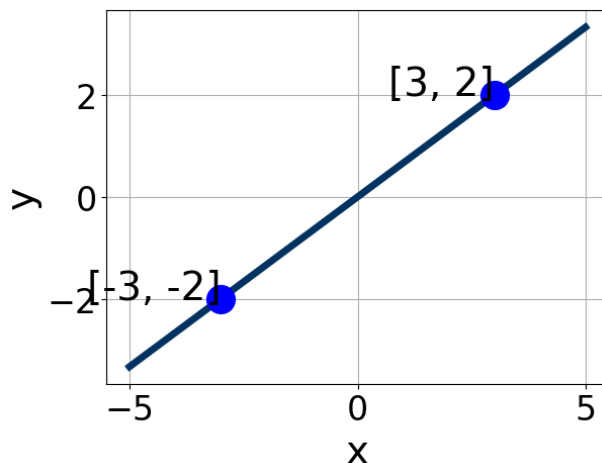
- A.  $x \in [-5.08, -4.19]$
  - B.  $x \in [-0.63, 0.17]$
  - C.  $x \in [0.24, 1.68]$
  - D.  $x \in [-1.11, -0.91]$
  - E. There are no real solutions.
- 

13. Solve the equation below. Then, choose the interval that contains the solution.

$$-11(-3x + 17) = -7(4x - 14)$$

- A.  $x \in [-3.1, 0]$
  - B.  $x \in [3.8, 6.6]$
  - C.  $x \in [0.6, 2.7]$
  - D.  $x \in [16.2, 18.7]$
  - E. There are no real solutions.
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14. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [-1.1, -0.5]$ ,  $B \in [0.97, 1.03]$ , and  $C \in [-1, 1]$   
 B.  $A \in [-1.1, -0.5]$ ,  $B \in [-2.47, -0.95]$ , and  $C \in [-1, 1]$   
 C.  $A \in [-4.3, -0.7]$ ,  $B \in [1.95, 3.12]$ , and  $C \in [-1, 1]$   
 D.  $A \in [1.4, 2.8]$ ,  $B \in [1.95, 3.12]$ , and  $C \in [-1, 1]$   
 E.  $A \in [1.4, 2.8]$ ,  $B \in [-3.22, -1.66]$ , and  $C \in [-1, 1]$

15. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{-9x - 4}{7} - \frac{-9x - 9}{5} = \frac{3x + 8}{3}$$

- A.  $x \in [-1.6, 0.2]$   
 B.  $x \in [-3.9, -0.8]$   
 C.  $x \in [-7.3, -5.8]$   
 D.  $x \in [-11.5, -9.5]$   
 E. There are no real solutions.

16. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Perpendicular to  $9x - 8y = 11$  and passing through the point  $(-2, -7)$ .

- A.  $m \in [-1.2, -0.9]$   $b \in [-9.45, -8.64]$

- B.  $m \in [-0.97, -0.79]$   $b \in [-9.45, -8.64]$   
C.  $m \in [-0.97, -0.79]$   $b \in [-5.05, -4.79]$   
D.  $m \in [-0.97, -0.79]$   $b \in [8.23, 9.33]$   
E.  $m \in [0.67, 0.9]$   $b \in [-5.25, -5.01]$
- 

17. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{3x - 9}{8} - \frac{-8x + 9}{5} = \frac{7x + 6}{3}$$

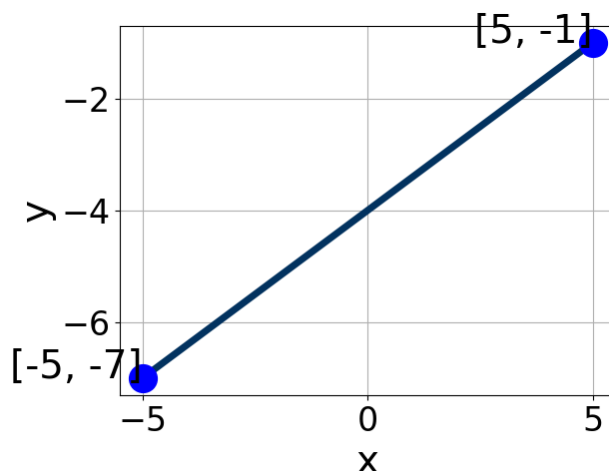
- A.  $x \in [-4.7, -1.7]$   
B.  $x \in [1.23, 4.23]$   
C.  $x \in [-14.74, -11.74]$   
D.  $x \in [-67.98, -64.98]$   
E. There are no real solutions.
- 

18. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$(4, 5)$  and  $(10, -5)$

- A.  $m \in [-7.67, -0.67]$   $b \in [0.2, 2.9]$   
B.  $m \in [-7.67, -0.67]$   $b \in [-13, -11]$   
C.  $m \in [-1.33, 5.67]$   $b \in [-23.5, -18.9]$   
D.  $m \in [-7.67, -0.67]$   $b \in [9.9, 13.2]$   
E.  $m \in [-7.67, -0.67]$   $b \in [-16.1, -13.2]$
- 

19. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [3, 12]$ ,  $B \in [-7.5, -4.4]$ , and  $C \in [20, 25]$   
 B.  $A \in [-0.6, 0.4]$ ,  $B \in [-3, -0.1]$ , and  $C \in [3, 7]$   
 C.  $A \in [-11, -2]$ ,  $B \in [3.8, 7.8]$ , and  $C \in [-20, -15]$   
 D.  $A \in [3, 12]$ ,  $B \in [3.8, 7.8]$ , and  $C \in [-20, -15]$   
 E.  $A \in [-0.6, 0.4]$ ,  $B \in [-0.6, 1.4]$ , and  $C \in [-13, 0]$

20. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$$(9, -7) \text{ and } (-10, -3)$$

- A.  $m \in [-0.59, 0.04]$   $b \in [6.5, 8.1]$   
 B.  $m \in [-0.59, 0.04]$   $b \in [4.7, 5.5]$   
 C.  $m \in [-0.59, 0.04]$   $b \in [-17.2, -14.8]$   
 D.  $m \in [-0.59, 0.04]$   $b \in [-5.5, -1.1]$   
 E.  $m \in [0.07, 0.95]$   $b \in [-2.3, 0.2]$

21. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Perpendicular to  $8x - 7y = 9$  and passing through the point  $(-5, -10)$ .



- A.  $m \in [0.58, 0.96]$   $b \in [-5.8, -5.1]$
  - B.  $m \in [-1.61, -1.05]$   $b \in [-16.4, -11.7]$
  - C.  $m \in [-0.99, -0.78]$   $b \in [-5.3, -4.9]$
  - D.  $m \in [-0.99, -0.78]$   $b \in [11.9, 14.4]$
  - E.  $m \in [-0.99, -0.78]$   $b \in [-16.4, -11.7]$
- 

22. Solve the equation below. Then, choose the interval that contains the solution.

$$-15(-6x + 19) = -14(12x + 4)$$

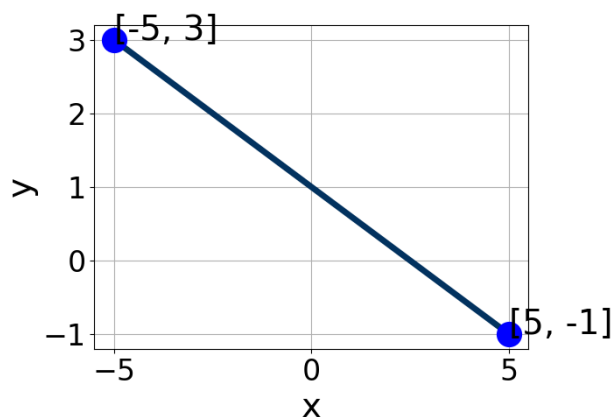
- A.  $x \in [-4.6, -4.26]$
  - B.  $x \in [0.94, 1.57]$
  - C.  $x \in [0.34, 1.31]$
  - D.  $x \in [-1.67, -0.74]$
  - E. There are no real solutions.
- 

23. Solve the equation below. Then, choose the interval that contains the solution.

$$-16(4x + 7) = -11(13x + 5)$$

- A.  $x \in [-1.4, 0.2]$
  - B.  $x \in [1, 2.5]$
  - C.  $x \in [-0.8, 1.2]$
  - D.  $x \in [-2.5, -2]$
  - E. There are no real solutions.
- 

24. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [-3.5, -0.3]$ ,  $B \in [-6.5, -4.5]$ , and  $C \in [-5.8, -1.4]$   
 B.  $A \in [1.9, 3.7]$ ,  $B \in [-6.5, -4.5]$ , and  $C \in [-5.8, -1.4]$   
 C.  $A \in [1.9, 3.7]$ ,  $B \in [2.5, 6]$ , and  $C \in [4.7, 8.4]$   
 D.  $A \in [-0.4, 0.7]$ ,  $B \in [0.2, 1.1]$ , and  $C \in [-0.4, 3.2]$   
 E.  $A \in [-0.4, 0.7]$ ,  $B \in [-1.9, 0.5]$ , and  $C \in [-2.4, -0.8]$

25. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{-3x - 3}{2} - \frac{-7x + 6}{3} = \frac{7x - 4}{8}$$

- A.  $x \in [-3, 1]$   
 B.  $x \in [23, 29]$   
 C.  $x \in [-74, -67]$   
 D.  $x \in [-126, -119]$   
 E. There are no real solutions.

26. Find the equation of the line described below. Write the linear equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

Perpendicular to  $8x - 3y = 7$  and passing through the point  $(10, -9)$ .

- A.  $m \in [-0.16, 0.45]$   $b \in [-15.75, -9.75]$

- B.  $m \in [-0.49, -0.3]$   $b \in [3.25, 8.25]$   
C.  $m \in [-3.16, -2.5]$   $b \in [-6.25, -1.25]$   
D.  $m \in [-0.49, -0.3]$   $b \in [-21, -17]$   
E.  $m \in [-0.49, -0.3]$   $b \in [-6.25, -1.25]$
- 

27. Solve the linear equation below. Then, choose the interval that contains the solution.

$$\frac{-4x - 9}{4} - \frac{5x - 7}{6} = \frac{-5x + 8}{7}$$

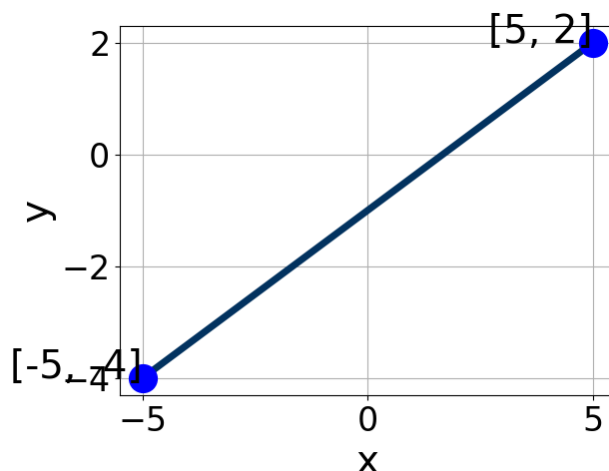
- A.  $x \in [-1.5, 0.7]$   
B.  $x \in [-4.8, -2.6]$   
C.  $x \in [-3, -1.3]$   
D.  $x \in [-9.5, -7.7]$   
E. There are no real solutions.
- 

28. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$(8, 11)$  and  $(7, -3)$

- A.  $m \in [9, 15]$   $b \in [3, 8]$   
B.  $m \in [9, 15]$   $b \in [-10, -7]$   
C.  $m \in [-18, -9]$   $b \in [94, 97]$   
D.  $m \in [9, 15]$   $b \in [-101, -95]$   
E.  $m \in [9, 15]$   $b \in [101, 103]$
- 

29. Write the equation of the line in the graph below in Standard Form  $Ax + By = C$ . Then, choose the intervals that contain  $A$ ,  $B$ , and  $C$ .



- A.  $A \in [1.4, 6.1]$ ,  $B \in [-5.4, -3.64]$ , and  $C \in [3.4, 8.8]$   
 B.  $A \in [-3.6, -2.4]$ ,  $B \in [4.83, 5.33]$ , and  $C \in [-7.3, -4.3]$   
 C.  $A \in [-1.6, -0.5]$ ,  $B \in [0.66, 1.66]$ , and  $C \in [-2, -0.8]$   
 D.  $A \in [1.4, 6.1]$ ,  $B \in [4.83, 5.33]$ , and  $C \in [-7.3, -4.3]$   
 E.  $A \in [-1.6, -0.5]$ ,  $B \in [-2.39, -0.89]$ , and  $C \in [-0.7, 4.8]$

30. First, find the equation of the line containing the two points below. Then, write the equation in the form  $y = mx + b$  and choose the intervals that contain  $m$  and  $b$ .

$(-8, 11)$  and  $(10, -5)$

- A.  $m \in [0.5, 1.8]$   $b \in [-14.8, -12.7]$   
 B.  $m \in [-3.7, 0.5]$   $b \in [1.6, 6.1]$   
 C.  $m \in [-3.7, 0.5]$   $b \in [-16, -14.5]$   
 D.  $m \in [-3.7, 0.5]$   $b \in [17.8, 21]$   
 E.  $m \in [-3.7, 0.5]$   $b \in [-4.4, -1.9]$